Amendments to the Claims

Please amend the claims as indicated in the marked-up version of the Listing of Claims presented below. This Listing of Claims replaces all prior versions and listings of the claims in the application.

Listing of Claims

1. (Currently Amended) An electrical combination comprising:

a first battery having a first plurality of battery cells, each cell in the first plurality having a Lithium-based chemistry, the first battery having a first nominal voltage in a nominal voltage range;

a second battery having a second plurality of battery cells, the total number of cells in the first plurality being different than the total number of cells in the second plurality, each cell in the second plurality having a Lithium-based chemistry, the second battery having a second nominal voltage, the second nominal voltage being different than the first nominal voltage and being outside of the nominal voltage range; and

a battery charger operable to charge the first battery and the second battery.

2. (Original) The electrical combination as set forth in Claim 1 wherein the first battery includes an identification component having a value representing one of the first nominal voltage and the nominal voltage range, and wherein the charger is operable to identify the value of the identification component.

3. (Original) The electrical combination as set forth in Claim 2 wherein the first battery includes a battery controller, the identification component including the battery controller.

4. (Original) The electrical combination as set forth in Claim 2 wherein the first battery includes a chemistry identification component having a value representing the Lithium-based chemistry of the first battery.

5. (Original) The electrical combination as set forth in Claim 4 wherein the first battery includes a battery controller, the chemistry identification component including the battery controller.

6. (Original) The electrical combination as set forth in Claim 4 wherein the charger includes a controller operable to identify the value of the chemistry identification component.

7. (Original) The electrical combination as set forth in Claim 2 wherein the charger includes a controller operable to identify the value of the identification component.

8. (Original) The electrical combination as set forth in Claim 7 wherein the controller is operable to control a supply of charging current to charge a battery.

9. (Original) The electrical combination as set forth in Claim 7 wherein the controller is operable to monitor a battery characteristic.

10. (Original) The electrical combination as set forth in Claim 9 wherein the battery characteristic includes a battery voltage.

11. (Original) The electrical combination as set forth in Claim 9 wherein the controller is operable to control a charging function.

12. (Original) The electrical combination as set forth in Claim 11 wherein the charging function includes one of termination of charging of the first battery and termination of a charging mode of charging the first battery.

13. (Original) The electrical combination as set forth in Claim 11 wherein the charging function includes one of initiation of charging of the first battery and initiation of a charging mode of charging the first battery.

14. (Original) The electrical combination as set forth in Claim 11 wherein the controller selects a battery characteristic threshold for the charging function when the controller identifies the value of the identification component.

15. (Original) The electrical combination as set forth in Claim 14 wherein the battery characteristic threshold includes a first battery voltage threshold.

16. (Original) The electrical combination as set forth in Claim 15 wherein the first battery voltage threshold is related to one of the first nominal voltage and the nominal voltage range.

17. (Original) The electrical combination as set forth in Claim 14 wherein the second nominal voltage is in a second nominal voltage range, the second nominal voltage range being different than the first nominal voltage range.

18. (Original) The electrical combination as set forth in Claim 17 wherein the second battery includes a second identification component having a second value representing one of the second nominal voltage and the second nominal voltage range, wherein the charger is operable to identify the second value of the second identification component, the controller selecting a second battery characteristic threshold for the charging function when the controller identifies the second value of the second identification component, the second battery characteristic threshold being different than the first battery characteristic threshold.

19. (Original) The electrical combination as set forth in Claim 18 wherein the charging function includes one of termination of charging of the second battery and termination of a charging mode of charging the second battery.

20. (Original) The electrical combination as set forth in Claim 18 wherein the charging function includes one of initiation of charging of the second battery and initiation of a charging mode of charging the second battery.

21. (Original) The electrical combination as set forth in Claim 18 wherein the battery characteristic threshold includes a first battery voltage threshold, and wherein the second battery characteristic threshold includes a second battery voltage threshold, the second battery voltage threshold being different than the first battery voltage threshold.

22. (Original) The electrical combination as set forth in Claim 21 wherein the second battery voltage threshold is related to one of the second nominal voltage and the second nominal voltage range.

23. (Original) The electrical combination as set forth in Claim 1 wherein the second nominal voltage is in a second nominal voltage range, the second nominal voltage range being different than the first nominal voltage range.

24. (Original) The electrical combination as set forth in Claim 23 wherein the second battery includes an identification component having a value representing one of the second nominal voltage and the second nominal voltage range, and wherein the charger is operable to identify the value of the identification component.

25. (Original) The electrical combination as set forth in Claim 24 wherein the second battery includes a battery controller, the identification component including the battery controller.

26. (Original) The electrical combination as set forth in Claim 24 wherein the second battery includes a chemistry identification component having a value representing the Lithium-based chemistry of the first battery.

27. (Original) The electrical combination as set forth in Claim 26 wherein the second battery includes a battery controller, the chemistry identification component including the battery controller.

28. (Original) The electrical combination as set forth in Claim 26 wherein the charger includes a controller operable to identify the value of the chemistry identification component.

29. (Currently Amended) A method of charging a battery using a battery charger, a first battery having a Lithium-based chemistry, the first battery having a first nominal voltage in a first nominal voltage range, a second battery having a Lithium-based chemistry, the second battery having a second nominal voltage in a second nominal voltage range, the second nominal voltage being different than the first nominal voltage, the second nominal voltage range being different than the first nominal voltage range, ~~a~~ the battery charger being operable to charge the first battery and the second battery, said method comprising the acts of:

electrically connecting the battery charger and the first battery;

charging the first battery via a pulse charge;

electrically connecting the battery charger and the second battery; and

charging the second battery via a pulse charge.

30. (Original) The method as set forth in Claim 29 and further comprising the act of identifying one of a nominal voltage and a nominal voltage range of one of the first battery and the second battery.

31. (Original) The method as set forth in Claim 29 and further comprising the act of receiving a signal from the battery, the signal being indicative of one of a nominal voltage and a nominal voltage range of one of the first battery and the second battery.

32. (Original) The method as set forth in Claim 29 and further comprising the act of identifying the chemistry of one of the first battery and the second battery.

33. (Original) The method as set forth in Claim 29 and further comprising the act of receiving a signal from the battery, the signal being indicative of the chemistry of one of the first battery and the second battery.

34. (Original) The method as set forth in Claim 29 and further comprising the act of monitoring a battery characteristic.

35. (Original) The method as set forth in Claim 34 wherein the monitoring act includes the act of monitoring a battery voltage.

36. (Original) The method as set forth in Claim 34 and further comprising the act of controlling a charging function based on one of a nominal voltage and a nominal voltage range of the one of the first battery and the second battery.

37. (Original) The method as set forth in Claim 36 wherein the controlling act includes controlling one of the act of terminating charging of one of the first battery and the second battery and the act of terminating a charging mode of charging of one of the first battery and the second battery.

38. (Original) The method as set forth in Claim 36 wherein the controlling act includes controlling one of the act of initiating charging of one of the first battery and the second battery and the act of initiating a charging mode of charging of one of the first battery and the second battery.

39. (Original) The method as set forth in Claim 36 and further comprising the act of selecting a battery characteristic threshold for the charging function based on one of a nominal voltage and a nominal voltage range of the one of the first battery and the second battery.

40. (Original) The method as set forth in Claim 39 and further comprising the act of selecting a first battery characteristic threshold for the charging function based on one of the first nominal voltage and the first nominal voltage range of the first battery.

41. (Original) The method as set forth in Claim 40 and further comprising the act of selecting a second battery characteristic threshold for the charging function based on one of the second nominal voltage and the second nominal voltage range of the second battery, the second battery characteristic threshold being different than the first battery characteristic threshold.

42. (Currently Amended) A battery having a Lithium-based chemistry, the battery having a nominal voltage in a nominal voltage range, the battery comprising:

a plurality of battery cells, each cell in the plurality having a Lithium-based chemistry;

a chemistry identification component indicative of the chemistry of the plurality of battery cells; and

an identification component indicative of one of the nominal voltage and the nominal voltage range of the battery;

wherein the battery is operable with an electrical device, power being transferable between the battery and the electrical device, the chemistry of the battery and the one of the nominal voltage and the nominal voltage range of the battery being identifiable by the electrical device.

43. (Original) The battery as set forth in Claim 42 wherein the battery includes a controller, the chemistry identification component including the controller.

44. (Original) The battery as set forth in Claim 42 wherein the battery includes a controller, the identification component including the controller.

45. (Original) The battery as set forth in Claim 42 wherein the electrical device includes a battery charger operable to supply a charging current to the battery to charge the battery, the chemistry of the battery and the one of the nominal voltage and the nominal voltage range of the battery being identifiable by the battery charger.

46-67. (Cancelled)

68. (Currently Amended) An electrical combination comprising:

a first battery having a first plurality of battery cells, each cell in the first plurality having a Lithium-based chemistry;

a second battery having a second plurality of battery cells, each cell in the second plurality having one of a Nickel-Cadmium chemistry and a Nickel-Metal-Hydride chemistry; and

a battery charger operable to charge the first battery and the second battery via pulse charging.

69. (Original) The electrical combination as set forth in Claim 68 and further comprising a third battery having the other of a Nickel-Cadmium and a Nickel-Metal-Hydride chemistry, and wherein the battery charger is operable to charge the third battery.

70. (Original) The electrical combination as set forth in Claim 68 wherein the battery charger is operable to identify the Lithium-based chemistry of the first battery.

71. (Original) The electrical combination as set forth in Claim 70 wherein the first battery includes an identification component indicative of the Lithium-based chemistry of the first battery, and wherein the battery charger receives a signal indicative of the Lithium-based chemistry of the first battery.

72. (Original) The electrical combination as set forth in Claim 70 wherein the battery charger includes a controller operable to identify the Lithium-based chemistry of the first battery.

73. (Original) The electrical combination as set forth in Claim 68 wherein the battery charger includes a charging circuit connectable to a power source and operable to supply a charging current to the first battery and to the second battery.

74. (Original) The electrical combination as set forth in Claim 73 wherein the battery charger includes a controller operable to control the charging circuit and to control the charging current supplied through the charging circuit to the first battery and to the second battery.

75. (Original) The electrical combination as set forth in Claim 74 wherein the controller is operable to identify the Lithium-based chemistry of the first battery and to control the charging circuit to control charging current supplied through the charging circuit to the first battery.

76. (Original) The electrical combination as set forth in Claim 74 wherein the controller is operable to control the charging circuit to supply charging current by a first charging algorithm to the first battery and by a second charging algorithm to the second battery, the first charging algorithm being different than the second charging algorithm.

77. (Original) The electrical combination as set forth in Claim 68 wherein the first battery has a first nominal voltage in a first nominal voltage range, wherein said electrical combination further comprises a third battery having a nominal voltage in a nominal voltage range, the nominal voltage of the third battery being different than the first nominal voltage, the nominal voltage range of the third battery being different than the first nominal voltage range, and wherein the battery charger is operable to charge the third battery.

78. (Original) The electrical combination as set forth in Claim 77 wherein the battery charger is operable to identify one of a nominal voltage and a nominal voltage range of the first battery and of the third battery.

79-92. (Cancelled)

93. (Currently Amended) An electrical combination comprising:

a first power tool operating in a first voltage range;

a first battery having a first plurality of battery cells, each cell in the first plurality having a Lithium-based chemistry, the first battery having a first battery nominal voltage in a first nominal voltage range, the first battery operable to power the first power tool;

a second power tool operating in a second voltage range, the second voltage range being different than the first voltage range;

a second battery having a second plurality of battery cells, the total number of cells in the first plurality being different than the total number of cells in the second plurality, each cell in the second plurality having a Lithium-based chemistry, the second battery having a second battery nominal voltage in a second nominal voltage range, the second battery nominal voltage being different than the first battery nominal voltage and being outside of the first nominal voltage range, the second battery being operable to power the second power tool; and

a battery charger operable to charge the first battery and the second battery.

94. (Original) The electrical combination as set forth in Claim 93 wherein one of the first power tool and the second power tool is a hand-held power tool.

95. (Original) The electrical combination as set forth in Claim 93 wherein the first battery includes a first identification circuit, the battery charger being operable to identify one of the first battery nominal voltage and the first nominal voltage range based at least in part on the first identification circuit.

96. (Original) The electrical combination as set forth in Claim 95 wherein the second battery includes a second identification circuit, the battery charger being operable to identify the second battery nominal voltage based at least in part on the second identification circuit.

97. (Original) The electrical combination as set forth in Claim 96 wherein the first identification circuit includes a first value representing one of the first battery nominal voltage and the first nominal voltage range and wherein the second identification circuit includes a second value representing one of the second battery nominal voltage and the second nominal voltage range.

98. (Original) The electrical combination as set forth in Claim 93 wherein the first battery includes a first Lithium-based battery cell having a state of charge and wherein the battery charger is operable to identify the state of charge of the first Lithium-based battery cell and to charge the first battery based at least in part on the state of charge of the first Lithium-based battery cell.

99. (Original) The electrical combination as set forth in Claim 98 wherein the first battery includes a first battery controller operable to communicate the state of charge of the first Lithium-based battery cell with the battery charger.

100. (Original) The electrical combination as set forth in Claim 99 wherein the second battery includes a second Lithium-based battery cell having a state of charge and wherein the battery

charger is operable to identify the state of charge of the second Lithium-based battery cell and to charge the second battery based at least in part on the state of charge of the second Lithium-based battery cell

101. (Original) The electrical combination set forth in Claim 100 wherein the second battery includes a second battery controller operable to communicate the state of charge of the second Lithium-based battery cell with the battery charger.

102. (Currently Amended) The electrical combination as set forth in Claim 93 ~~wherein the first battery includes a first number of Lithium-based battery cells and the second battery includes a second number of Lithium-based battery cells, the first number being different from the second number; and~~

wherein the battery charger includes at least one terminal and a controller, the controller being operable to identify the ~~first~~ total number of Lithium-based battery cells of the first plurality when the first battery is electrically connected to the at least one terminal and to identify the ~~second~~ total number of Lithium-based battery cells of the second plurality when the second battery is electrically connected to the at least one terminal.

103. (Currently Amended) The electrical combination as set forth in Claim 102 wherein the controller is operable to charge the first battery based at least in part on the ~~first~~ total number of Lithium-based battery cells of the first plurality when the first battery is electrically connected to the at least one terminal and to charge the second battery based at least in part on the ~~second~~ total number of Lithium-based battery cells of the second plurality when the second battery is electrically connected to the at least one terminal.

104. (Currently Amended) The electrical combination as set forth in Claim 103 wherein the controller of the battery charger can determine the first battery nominal voltage of the first battery based at least in part on the ~~first~~ total number of Lithium-based battery cells of the first plurality.

105. (Currently Amended) The electrical combination as set forth in Claim 104 wherein the

controller of the battery charger can determine the second battery nominal voltage of the second battery based at least in part on the ~~second~~ total number of Lithium-based battery cells of the second plurality.

106. (Currently Amended) An electrical combination comprising:

a first battery having a Lithium-based chemistry;

a second battery having a chemistry other than a Lithium-based chemistry;

a first power tool operable to be powered by at least one of the first battery and the second battery;

a second power tool operable to be powered by at least the other of the first battery and the second battery; and

a battery charger operable to charge the first battery and the second battery and having a control circuit, the control circuit operable to provide charging current to both the first battery and the second battery in a pulse mode.

107. (Currently Amended) The electrical combination as set forth in Claim ~~107~~ 106 wherein the chemistry of the second battery is one of Nickel-Cadmium and Nickel-Metal-Hydride.

108. (Original) The electrical combination as set forth in Claim 107 wherein the chemistry of the second battery is Nickel-Cadmium.

109. (Original) The electrical combination as set forth in Claim 107 wherein the chemistry of the second battery is Nickel-Metal-Hydride.

110. (Original) The electrical combination as set forth in Claim 106 wherein one of the first power tool and the second power tool is a hand-held power tool.

111. (Original) The electrical combination as set forth in Claim 106 wherein the first battery includes a first identification circuit, the battery charger being operable to identify the chemistry of the first battery.

112. (Original) The electrical combination as set forth in Claim 111 wherein the second battery includes a second identification circuit, the battery charger being operable to identify the chemistry of the second battery.

113. (Original) The electrical combination as set forth in Claim 112 wherein the first identification circuit includes a first value representing the chemistry of the first battery and wherein the second identification circuit includes a second value representing the chemistry of the second battery.

114. (Original) The electrical combination as set forth in Claim 106 wherein the first battery includes a Lithium-based battery cell having a state of charge and wherein the battery charger is operable to identify the state of charge of the first Lithium-based battery cell and to charge the first battery based at least in part on the state of charge of the first Lithium-based battery cell.